

<p align="center">16 FINGERPRINT, PALMPRINT, AND MAJOR CASE PRINT RECORDING</p>	<p align="center">Page 1 of 3</p>
<p align="center">Division of Forensic Science LATENT FINGERPRINTS PROCEDURES MANUAL</p>	<p>Amendment Designator:</p>
	<p>Effective Date: 29-January-2004</p>
<p align="center">16 FINGERPRINT, PALMPRINT, AND MAJOR CASE PRINT RECORDING</p> <p>16.1 INTRODUCTION</p> <p>Fingerprint recording may be done for several reasons but the most common type of recording encountered by the latent print examiner are those impressions taken of an individual in association with a criminal charge. This type of fingerprint card contains inked reproductions of the friction ridge skin area on the distal finger section used for classification and search in a criminal record file. While adequate for classification purposes and subsequent establishment of prior criminal history, such recordings encompass a relatively small portion of the available friction ridge skin area contained on the inside of the hands. Fortunately, about 60% of latent print impression evidence are deposits from these distal joint areas and thus a majority of latent prints can be compared with the submission of a standard fingerprint card.</p> <p>Palm prints are recordings of the area between the wrist and digits which may also include the phalangeal portions of the fingers and the outside edge of the palm. Major case prints are a more elaborate friction ridge skin recording procedure which attempts to produce standards of all papillary skin of the hands including the extreme sides and tips of the fingers.</p> <p>While examiners are seldom involved in the fingerprint, palm print, or major case print recording process, they should be familiar with the procedures required to obtain full, legible inked standards in case the demand does arise or requests for instructional assistance are made. Without adequate inked standards, the best processing techniques, evidence preservation methods, and thorough comparison procedures are often futile.</p> <p>16.2 PREPARATIONS</p> <p>No specific preparations are required for this procedure.</p> <p>16.3 MINIMUM STANDARDS & CONTROLS</p> <p>The minimum standards and controls for the recording of inked fingerprints requires the inspection of each area recorded to determine if the detail present is a clear and accurate depiction of the area that is being recorded.</p> <p>16.4 PROCEDURE OR ANALYSIS</p> <p>16.4.1 Inked Fingerprint</p> <p>All inked friction ridge recordings should be taken using black fingerprint ink impressed on a standard, white fingerprint card. This eight-inch by eight-inch heavy stock document contains areas marked for a sequence of rolled inked impressions beginning with the right thumb and ending with the left little finger, two areas for simultaneous or plain inked impressions of index, middle, ring, and little fingers of both hands, and two areas for plain or flat inked impressions of the thumbs. This design is used worldwide with minor variations of document size.</p> <p>Proper inked recordings are highly dependent upon the ink preparation. Many brands of fingerprint inks are available, all generally yielding satisfactory results. Ink is applied to the fingers from a plate or slab which serves as a device for insuring a thin, uniform coating. Glass slabs are preferred, for they are easily cleaned, and when backed by a white card or paper reveal an accurate image of the ink adherence to the finger. Plates bearing ink from previous recordings should be cleaned and a fresh supply of ink applied. A small amount of ink about the size of a match head is placed near an edge of the plate, another in the middle, and a third near the opposite end. A clean rubber roller is used to distribute the ink evenly over the slab. The roller should be lifted occasionally during the process and allowed to spin freely to prevent unintentional layering from the supply deposits. A properly prepared plate will conceal all signs of the white backing but, when touched, will show a crisp, high contrast negative impression. It is much easier to add more ink when necessary than to remove an excessive coating.</p> <p>The fingerprint card is placed in a holder specifically designed for fingerprint recording. This device is essential for</p>	

<p>16 FINGERPRINT, PALMPRINT, AND MAJOR CASE PRINT RECORDING</p>	<p>Page 2 of 3</p>
<p>Division of Forensic Science</p> <p>LATENT FINGERPRINTS PROCEDURES MANUAL</p>	<p>Amendment Designator:</p> <p>Effective Date: 29-January-2004</p>
<p>it prevents the card from moving during the recording procedure while exposing the designated printing areas. The card is positioned to place the top row, marked for the right hand, in the exposed area of the holder.</p> <p>Individuals being fingerprinted must have clean, dry hands. Dirt, grease, lotions, or creams will prevent ink adhesion to all areas of the finger and prevent complete recordings. Excessive perspiration sometimes caused by the stress of the situation may interfere with the ink application but can be minimized with the use of alcohol wiped onto the fingers, then removed, immediately before the inking process.</p> <p>The recorder generally stands to the left of the person being printed and grasps the right thumb securely. The recorder's thumb and index finger should firmly seize the individual's thumb by the first joint for maximum control, as the individual's thumb is rolled from one side to the other in the ink supply using a steady motion. Digits most approximate cylinders in shape and should be placed perpendicular to the front edge of the plate and rolled through an arc of 180 degrees or more. Direction of flow should be from the awkward to the comfortable. Due to the natural rotation of the forearm, thumbs usually are turned toward the center of the individual's body while fingers are rolled towards the outside.</p> <p>The right thumb is recorded on the card with the same action as the ink was applied. The movement should be a steady, fluid flow from the right edge of the individual's thumb toward the recorder to the left edge. Stops or hesitations during the roll will produce unevenness and smears, and any reverse of direction will result in a double impression that masks detail. Once the right thumb is recorded, the index finger is inked and printed in the same manner except it is rolled from the left edge away from the recorder to the right.</p> <p>After the right hand is completed, the card is repositioned in the holder and the left hand printed. The ink is redistributed on the slab to restore the even coating and the procedures are repeated using opposite direction for the individual rolls. Some recorders prefer to change stance for the left hand to a position right of the individual but many find the same stance more comfortable. The left hand is recorded with the same procedure except the direction of the roll for each digit is reversed.</p> <p>Plain impressions are recorded with a new coating of ink by placing the four fingers together and pressing them lightly to the ink and straight down on the card. Similarly, the thumbs are reprinted with the vertical movement. Plain impressions display the least amount of distortion to characteristic depiction and serve as a check for correct rolled impression sequence.</p> <p>16.4.2 Palm Prints</p> <p>Palm prints are recorded on blank white stock or cards with minimal markings. Eight by eight inch cards commonly available may be satisfactory for many recordings but may prohibit a full printing from wrist to fingertip of some individuals. Eleven-inch heavy paper may be more useful. Palm prints are taken by two methods: 1) placing the inked hand onto the card positioned on a flat surface; or, 2) affixing the card to a cylinder and rolling the hand down the length of the card. Since many people have a depressed area in the center of the palm, the cylinder method is usually superior.</p> <p>An even coating of ink is applied to the palm and full length of the fingers using the ink roller. Some streaking is unavoidable but is usually of no great concern. Care must be exercised, however, to apply ink to all areas, including the outer edge of the palm. If a cylinder is not available, the inked hand is simply placed on the card with the fingers slightly spread and pressed firmly. Movement of the hand once positioned on the card must be prevented. The hand is then removed with a straight upward motion. The hand is then turned until the thumb is pointing up, placed to the outer side of the recorded print in a clear area and pressed to the card. A slight roll to the inside of the hand is executed. This will duplicate some portions of the previously recorded impression as a reference for the newly recorded detail.</p> <p>Cylinder recording requires a device with a sufficient circumference to accommodate the full length of the card</p>	

<p>16 FINGERPRINT, PALMPRINT, AND MAJOR CASE PRINT RECORDING</p>	<p>Page 3 of 3</p>
<p>Division of Forensic Science</p> <p>LATENT FINGERPRINTS PROCEDURES MANUAL</p>	<p>Amendment Designator:</p>
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<p>without an overlap. A large arson can or a gallon paint can may work well. The card is held in place with rubber bands or other elastic material slipped over both edges or may be taped to the can. After the palm is thoroughly and evenly inked, the wrist is placed near the bottom of the card and the hand pressed against the card as the cylinder is slowly rolled away from the individual. The recorded must insure that firm contact is maintained until the fingertips are reached. A slight spread of the fingers will reduce bulging of palmar areas and permit as complete as recording as possible. The outside of the palm may be printed with the card on a flat surface.</p> <p>16.4.3 Major Case Prints</p> <p>Major case prints is a phrase coined by the Federal Bureau of Investigation for those friction ridge recordings which attempt to depict all papillary skin areas often required when major crimes are committed. In addition to fingerprints and palm prints, areas not often recorded are inked and printed separately. These include the extreme side of all fingers and fingertip areas immediately surrounding the nail. Sides and tips may be inked using the supply slab or roller as long as all portions are evenly coated. A blank card is used.</p> <p>The recording is usually done with six motions per digit, the first by placing the full length of one side of the digit flat on the card and lifting the palm until the digit is perpendicular to the card at the nail, the second, by placing the full length of the center of the digit on the card and lifting the palm, and the third, using the other side of the digit. The fourth aims the digit at about a forty-five degree angle to the card using one side of the digit starting at about the middle of the joint and rolling toward the extreme tip, the fifth, a repeat with the center portion of the digit, and the sixth, the opposite side. All ten fingers should be recorded to reveal all sections of ridge structure. In addition, areas of the palm may be segmented, especially areas near the base of the fingers, using different angles between hand and card, to obtain full and legible recording.</p> <p>16.5 INTERPRETATION OF RESULTS</p> <p>Legible and complete inked recordings of all friction ridge skin formations enable conclusive comparisons of evidence latent impressions. Fragmentary latent impressions, which may have originated from any portion of the hands, can be identified provided such areas appear on inked standards. Incomplete standards can only produce incomplete findings and results.</p> <p>16.6 REFERENCES</p> <ol style="list-style-type: none"> 1. F.B.I. The Science of Fingerprints. 2. Olson, Robert. <i>Scott's Fingerprint Mechanics</i>; Charles C. Thomas Publisher: Springfield, IL, 1978. <p style="text-align: right;">◆End</p>	